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# PLANT IMMIGRANTS.

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Foreign Seed and Plant Introduction.

## EXPLANATORY NOTE.

This multigraphed circular is largely made up from notes received from agricultural explorers, foreign correspondents, cooperators, and others, relative to the more important plants which have recently been received by the Office of Foreign Seed and Plant Introduction of the Department of Agriculture; in it are also contained accounts of the behavior in America of plants previously introduced. Descriptions appearing here are revised and published later in the Inventory of Seeds and Plants Imported.

Applications from experimenters for plants or seeds described in these pages may be made to this Office at any time. As they are received the requests are placed on file and when the material is ready for the use of experimenters it is sent to those who seem best situated and best prepared to care for it. The plants or seeds here described (except such as are distributed direct or are turned over to specialists in the Department who are working on investigational problems) are propagated at our Plant Introduction Field Stations; and when ready to be distributed are listed in our annual check lists, copies of which are sent to experimenters in the late fall. It is not necessary, however, to await the receipt of these lists should one desire to apply for plants which are described herein.

One of the objects of the Office of Foreign Seed and Plant Introduction is to secure material for plant breeders and experimenters. Every effort will be made to fill specific requests for experimental quantities of new or rare foreign seeds or plants.

David Fairchild  
*Agricultural Explorer in Charge*

*Office of Foreign Seed and Plant Introduction,  
Bureau of Plant Industry,  
U. S. Department of Agriculture.*

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applying to this Office.**

*Aleurites moluccana* (Euphorbiaceae), 52449. **Candlenut** or **lumbang**. From Mayaguez, Porto Rico. Seed presented by Mr. D. W. May, in charge, Agricultural Experiment Station. "Individuals here eat these nuts to some extent, but occasionally they are made quite ill from them owing to the stage of ripeness of the nut or to some peculiar characteristic of the person that eats them. If they are eaten unripe they act as a strong purgative; if fully mature and roasted they are doubtless, in most cases, harmless. From the general experience in Porto Rico, however, I would advise eating them, if at all, with caution." (May.)

"Candlenut, or lumbang, oil is used in soapmaking, and in the Philippine Islands the press cake is highly prized as a fertilizer." (R. A. Young.)

*Hydnocarpus castanea* (Flacourtiaceae), 52514. From Moulmein, Burma. Seeds collected by Mr. J. F. Rock, agricultural explorer. "A large tree 50 to 80 feet in height, with smooth, light brown bark and fruits the size of a large orange, ripening from March to July. Only one tree among thousands was found with ripe fruits on January 7, 1921. It was loaded with ripe and semiripe fruits. The tree grows on steep rocky hills along watercourses near the Karen village of Oktade, several miles from Paung in the Martaban Hills on the Kalamia mountain range. The trees must be planted in gravelly well-drained soil.

"Strange to say the people in Moulmein know nothing about this tree and the superintendent of the leper asylum here did not know the tree grew at all in Burma. (True chaulmoogra oil, expressed from the seed of this tree, is very useful in the treatment of leprosy.) The foresters I met in the jungle never heard of the name 'Kalaw' which is the Burmese name of the tree. Many of the Burmese I interrogated knew the name but not the tree; they knew the seeds from the bazaars where they are sold. Only people actually making a living by collecting these seeds can give information." (Rock.)

*Inga laruina* (Mimosaceae), 52511. From Bangkok, Siam. Seeds collected by Mr. J. F. Rock, agricultural explorer. "A small ornamental tree native to South America, which is cultivated in Singapore." (Rock.)

A tropical American tree 9 to 15 m. high, with leaves composed usually of 4 leaflets; the flower clusters are longer than in other members of this

genus. As a shade tree for coffee this species is second in importance only to the "guava" (*I. vera*). Specimens have been found, in some cases, with nodules on the roots. The tree is one of those employed in the cacao cultivation of Guadeloupe in making hedges or windbreaks which are planted across the direction of the prevailing winds at distances of 100 m. (Adapted from Cook and Collins, Economic Plants of Porto Rico, Contributions from the U. S. National Herbarium, vol. 8, p. 167.)

*Ipomoea carnea* (Convolvulaceae), 52493. **Morning-glory.** From Bangkok, Siam. Collected by Mr. J. F. Rock, agricultural explorer. "This large, woody, scandent or rambling shrub, which can be grown over trellis work, is one of the largest flowered and handsomest species I know. It is covered with pink flowers all the year round and is easily grown from cuttings." (Rock.)

*Irvingia malayana* (Simaroubaceae), 52494. From Bangkok, Siam. Collected by Mr. J. F. Rock, agricultural explorer. "The seeds are very rich in fat, and an oil is extracted from them; they are also eaten roasted and remind one of butternuts. The seeds are sold on the market." (Rock.)

A tree native to Malacca, with thick, elliptic leaves, 4 inches long, and small flowers in axillary racemes. The large fruit is drupaceous. (Adapted from Hooker, Flora of British India, vol. 1, p. 522.)

*Piper* sp. (Piperaceae), 52572. From Kulara, via Cairns, Queensland. Seeds presented by Mr. J. A. Hamilton. "Wild pepper, a very ornamental vine, with very good fruits; it likes rich alluvial soil and plenty of moisture in the growing season. Of course it will not stand much frost, but as it is uninjured by the few frosty nights here, the plant should thrive in Southern California." (Hamilton.)

*Quercus ilex* (Fagaceae), 52506. **Holly oak.** From Thrace, Turkey. Seeds presented by Mr. Stephen R. Capps, U.S. Geological Survey, through Mr. T. H. Kearney, U. S. Department of Agriculture. "An evergreen, live oak, desirable as an ornamental and hedge plant, with a hollylike, usually crinkly leaf, ranging in shade in different individuals from yellow-green to dark green. The leaves are very dense, so that the bush looks solid, and about like holly leaves in that they are prickly enough to discourage animals and children but

not spiny enough to be really objectionable. The tough gnarled stems are very strong, and the smooth, mottled gray bark is about like holly bark.

"The plant takes kindly to pruning, as shown by those bushes growing along trails where sheep and goats have kept them trimmed back. It is hardy in a climate much like that of Washington, D. C., and is unaffected by temperatures of 0° to 110° F. These seeds were collected in Thrace, near the base of the Gallipoli Peninsula, where the plant is very common; it has a vertical range from sea level to 3,000 feet, the highest mountains in the district where it is found. The tree is adapted to a wide variety of soils, growing vigorously in beach sand, lowland silts, residual sandy and clayey soils, and on rocky surfaces with little soil.

"The bush grows to a height of 6 to 10 feet. I saw one individual, probably of the same species, that had a trunk 8 inches in diameter and was 20 feet high.

"To get the acorns before the crows and magpies beat me to them, I had to pick them before they fell naturally." (Capps.)

*Rhododendron racemosum* (Ericaceae), 52603. From Kew, England. Seeds presented by Sir David Prain, director, Royal Botanic Gardens. "A very desirable species discovered by Delavay in Yunnan, China, at an altitude of about 9,000 feet. It has small, pink, sweet-scented flowers which are produced when the plants are still small enough to be handled in pots. It is said to be perfectly hardy in England." (F. V. Coville.)

#### Notes from Agricultural Explorers in the Field.

Mr. J. F. Rock writes January 22, 1921:

"I am writing you from the heart of the Burmese jungle of the Northwest. For four days I have roamed the forests in search of ripe fruits of *Hydnocarpus kurzii*, but in vain until now. I have followed the Khodan stream, a tributary of the upper Chindwin River, for about 60 miles, and at present I am camping in a jungle village. The jungle is so dense that it is impossible to penetrate far, but by following sandy streambeds, which are dry at this time, I succeeded in going five miles. Both sides of this creek are lined with *Hydnocarpus kurzii*, in fact, the steep walls and mountain slopes are clothed with this tree which the Burmese call 'kalaw.' The fruits ripened last

September, in fact some ripened in June and July, and the villagers have collected about 350 baskets (60 pounds each) of seeds, and have sold them to India. There are still a lot of seeds on the ground from fruits which ripened later and I am having them collected. This kalaw seed collecting is not as easy as I thought it would be: first, the season is over, and one has to go over large areas to find enough seeds to make it worth while; second, the kalaw forests are local, - the first kalaw forest I struck after leaving Mawleik was two and a half days' journey from the latter place. I found about 10 pounds of seeds, but no more; the next kalaw forest I encountered 7 miles from a jungle village called Khoung Kyew. I had to walk the whole distance bare-footed as we crossed Khodan river eleven times, and that meant wading up to the waist in water. The forest along this river is magnificent--the wildest jungle I have ever seen. It is no joke to pass through the jungle; one sees elephant tracks, bear tracks, tiger tracks, etc. The natives will not venture out of their villages unless they go 15 or 20 together, and on this kalaw seed hunt I had that many with me. I have no rifle and these natives have no weapons save large knives. In July most of the fruits ripen, but the natives dare not go into the forests to collect them as bears then roam the kalaw forest and eat the fruit flesh, - not the seeds. The seeds are devoured by wild pigs.

"I wish I could describe the grandeur of the forests. The river banks are perfect walls of green, impenetrable jungle. The natives told me that in the evening they dare not leave their jungle village, as herds of wild elephants come out to the river bed to bathe. The natives have lost many buffaloes from tigers and the only way to get the tigers is by means of traps. Last week a coolie who carried some provisions from one village to another was found trampled to death by elephants. The men sing, while going through the woods, to scare the beasts away. Tomorrow I am going to the main kalaw forest with 30 coolies. Next week I will return to Mawleik, crossing the Khodan stream about 40 to 50 times."

January 23, 1921.

"To-day I returned with the coolies from a *Hydnocarpus* hunt. Time is getting scarce, and I hired one man from every house of this village. We went far into the forests, and there separated into smaller

parties collecting seeds. I got about one large gunny bag full of perfect seed; this is enough to start a plantation. Coming back from the jungle we found that a tiger had followed our footsteps for several miles, - absolutely fresh tracks. It made me rather uneasy, as we had to pass through dense jungle thicket, and in my imagination I saw it lurking in every dark spot. I was glad when I struck the village again. Up in the jungle we met a bear with cubs. The natives shouted and drove it away, leaving one young behind. This the natives brought down, and I amused myself tonight feeding it with condensed milk. Well, the Hydnocarpus seed hunt is over, and I am glad."

January 24, 1921.

"Early this morning a little boy about five years old came to this village from an outlying place, about a fourth of a mile distant, and reported that a tiger had carried off some women. I immediately went with about 30 men and found two women lying on the edge of a paddy field, stone-dead; a little girl two years old had been carried away by the tiger. One woman, still alive, was lying near the hut badly wounded. The little boy who came with the news was the only other survivor. The tiger had pushed him into the fire and his knee was burned severely. All this happened at dawn, so the little boy said.

"This was a terrible thing to me because the husbands of the dead women had been with me kalaw-seed hunting, - and for some reason or other they stayed in this village, although there remained plenty of time for them to return, as it was only four in the afternoon when I dismissed them all. We had the woman carried to the village and I did the best I could for her wound.

"The tiger is said to be the same which followed us into the jungle. I wrote a letter to the police at Mawleik, some four days' journey. Meantime, against my better judgment, the natives and I are going on a search for the tiger. I advised them not to go, as the child who was carried away is of course dead, and we have no weapons except my Colt.

"This kalaw seed hunt has cost three lives and may cost one more. I hope to get away tomorrow and will take the wounded woman with me to Mawleik, trusting that she can stand the journey. (The woman died in the Mawleik hospital; and the tiger was later caught in a trap.)"



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